CONTINENTAL INDUSTRIE

Bearing Change Procedure
Centrifugal multistage blowers

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Maintenance

BEARING CHANGE PROCEDURE

The purpose of this procedue is to inform and explain in details the bearings change for blower On site for a preventive maintenance plan or for a corrective maintenance action.

This is a general procedure, in case of special operation please refer to Factory instruction.

NECESSARY TOOLS LIST

1

2

3

5

4

6

1 - Sledgehammer.
2 - Depth gauge
3 - Mechanical screwdrivers.
4 - Socket wrench: 24 mm.
5 - Allen keys: 5 to 16 mm.
6 - Flat spanners: 10, 13, 24 mm.

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BEARING CHANGE PROCEDURE

NECESSARY TOOLS LIST FOR HUB AND BEARING EXTRACTION

Hand anvil (see Technical data sheet for each model)

Hub extractor or Hydraulic jack

Pins key for Nut mounting
(see Technical data sheet for each model)

Tool for maintaining rotor in position during bearing change. (see Technical data sheet for each model)

BEARING CHANGE PROCEDURE

1 - Machine environment

- Deposit of the coupling guard.
- Deposit of the coupling spacer (if direct trasnmission).
- Deposit of the pulley (if belt transmission).
- Deposit of the motor for easy acces of the coupling side bearing housing.
- Deposit of all equipment or infrastructure, which could obstruct the acces of the two bearing housing of the blower.
- Drain the oil from the bearing housing.
- Disassembling of the blower-coupling hub (if direct transmission).

- 2 Methods are possible for dismantle the coupling-hub:

Hub extractor.

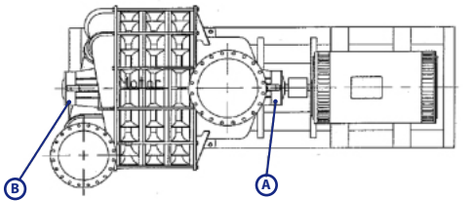
Hydraulic Jack.

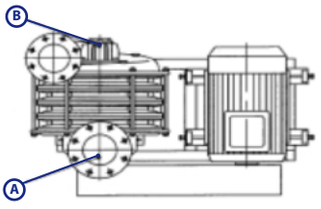
BEARING CHANGE PROCEDURE

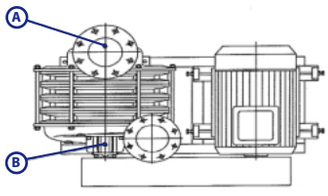
2 - Bearing´s housing disassembling

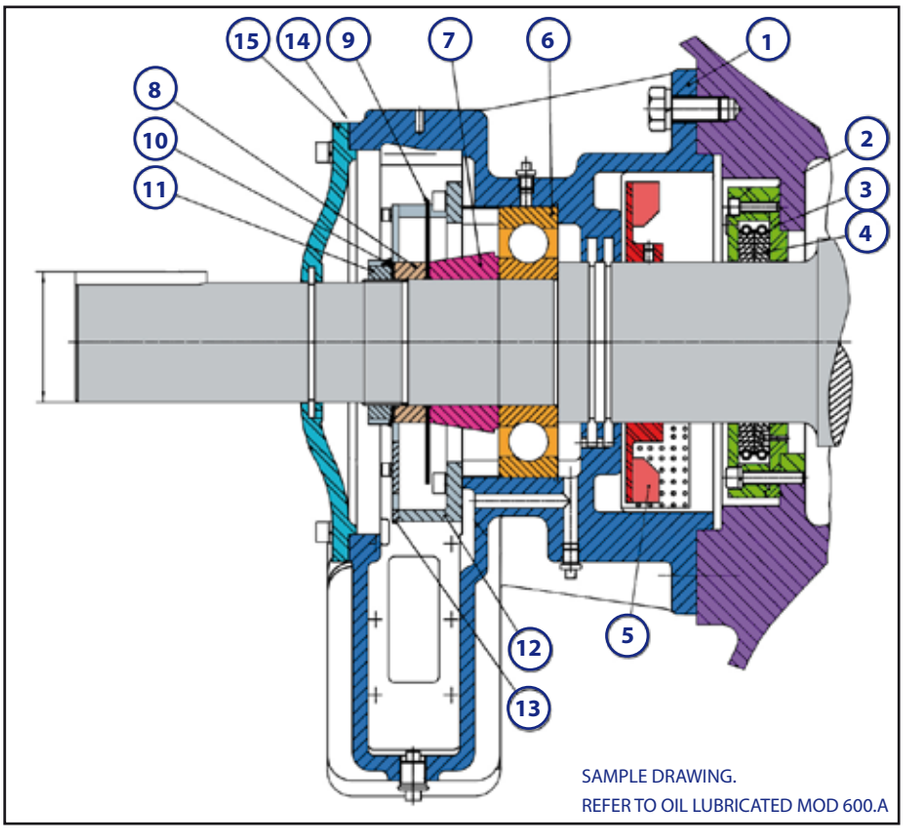
- Introduction: Locate on the blower section drawing, the fixed bearing side (generally the inlet side). We will call him side A and the bearing, which have the outer ring free, side B.

- For work in the state of art, we will always change the free bearing (side B) first. The blocked bearing, which will be changed later on, will guarantee the food position of the rotor for the assembly of the two bearing, and will absorb the schocks due to the assembly of the new bearing.









INLET BEARINGS HOUSING DETAIL WITH CARBON RING SEAL (MODEL 600.A).

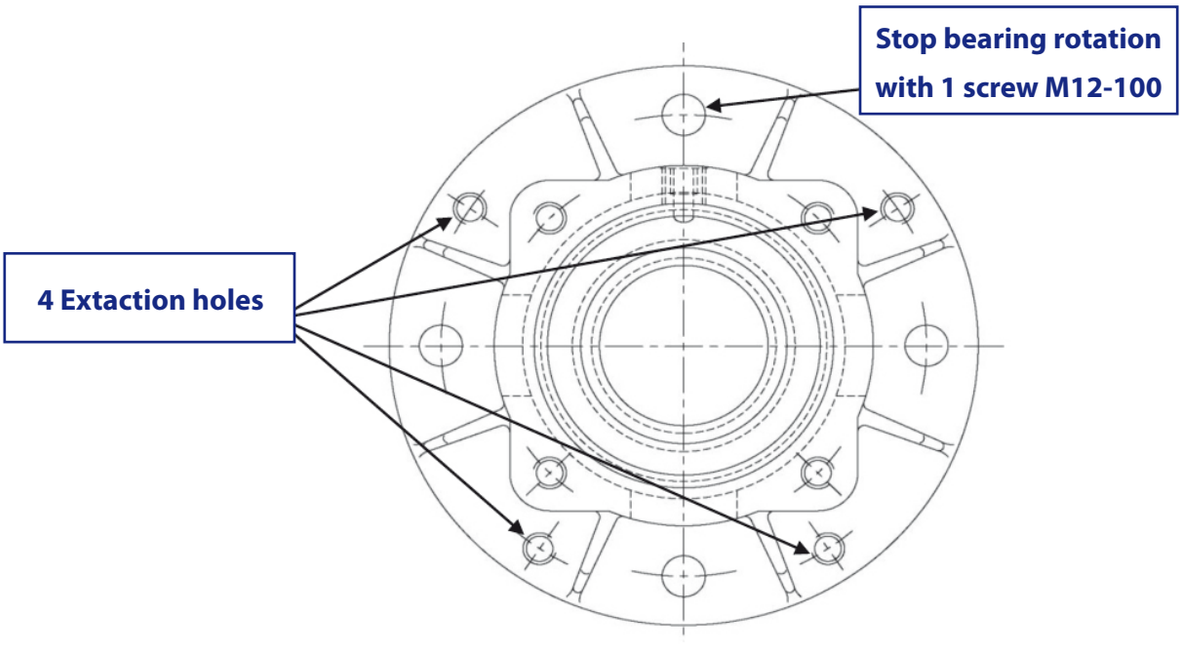
1 - HOUSING, BEARING
2 - RETAINER, CARBON RING
3 - ADAPTER, CARBON RING
4 - CARBON RING
5 - FAN COOLING
6 - BEARING, BALL 6320 C3 THT
7 - SPACER, LONG
8 - SPACER, SHORT
9 - OIL SLINGER
10 - WASHER, MB20
11 - NUT, KM20
12 - BILL RESERVOIR
13 - CAP, OIL RESERVOIR
14 - GASKET, BEARING CAP
15 - CAP, BEARING-INLET END

BEARING CHANGE PROCEDURE

2.1 - Disassembling of side B bearing´s housing.

- Open the housing cap (item 15).
- Deposit the bearing cap gasket (item 15).
- Deposit the KM nut and his locked washer (item 11).
- Deposit the short spacer (item 8)
- Deposit the oil reservoir + gasket, the retainer and the oil slinger (item 12,13 and 9).
- Deposit the long spacer (item 7).
- Deposit the M16-40 bearing´s housing fixation screws (item 6).

Using 4 jack bolts HM16-100, to extract the housing with the bearing. To drive out the bearing of the housing using a jet.



To deposit the ventilator (not to forget to loosen the 2 screws in compression AHCM 8 - 20 Pl) to slightly warm it in order to dilate it to facilitate it´s demounting.

BEARING CHANGE PROCEDURE

3 - Sealing packing

3.1 - Graphic rings

- Deposit the complete rings case (Item 2).
- Inspect and change the rings if necessary.
- Re-install the rings case on the flange (in case of rings replacememnt, grind the rings on the shaft before assembling).

3.2 - Simple carbons rings

- Deposit the complete rings case (Item 2).
- Inspect and change the rings if necessary.
- Re-install the rings case on the flange.

3.3 - Doubles carbons rings

- Deposit the complete rings case (Item 2).
- Inspect and change the rings if necessary.
- Re-install the rings case on the flange.

BEARING CHANGE PROCEDURE

4 - Re - assemble of the side B bearing housing.

Introduction: for work in the state of art, its important to well clean the internals parts of the housing with a cleaning product, which will guarantee the life of the bearing.

- Install the fan and find it´s location.

In the case of graphite rings:

- It should be at approximately at 11 mm of the last groove.
- Heat it slightly to facilitate its assembly, don´t forget to tight the two screws in compresion
- AHCM 8 - 20 PI

In the case of simple carbons rings:

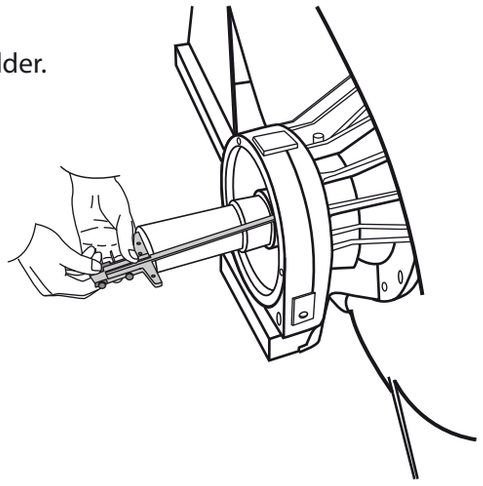
- It should be at approximately at 11 mm of the last groove.
- Warm it slightly to facilitate its assembly, don´t forget to tight the two screws in compresion
- AHCM 8 - 20 PI

In the case of doubles carbons rings:

- It should be at approximately at 3 mm from the carbons rings case.
- Install the housing on the flange with the 8 screws M16-40.

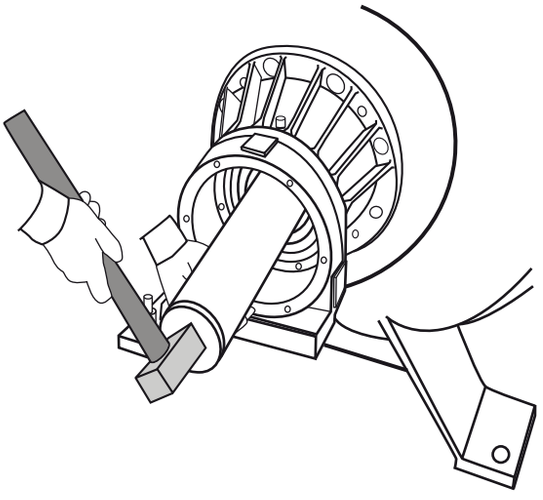
BEARING CHANGE PROCEDURE

- Measure the disctance X: from the beginning of the shaft until the shoulder.



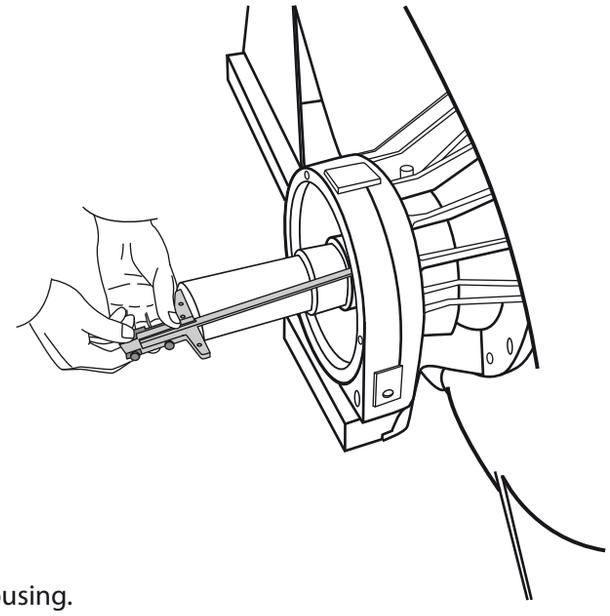
- With a bearing heater, warm the inner ring of the new bearing to 90ºC.

- With a hand anvil (tools item 7) and a little sledgehammer, install the bearing on taping on the hand anvil until it rebounds on the bearing.



BEARING CHANGE PROCEDURE

- Check the location of the bearing with the distance X minus the bearing thickness.



End of the assembling of the side B bearing housing.

- The long spacer (item 7).
- Deposit the oil reservoir + gasket, the retainer and the oil slinger (item 12,13 and 9) be sure that the oil slinger is well positioned after the shaft groove.
- The short spacer (item 8)
- The KM nut and his locked washer (item 10 and 11)
- The bearing cap gasket (item 14).
- The housing cap (item 15).

5 - Disassembling of side A bearing´s housing

Same operating mode that side B bearing´s housing.

6 - Re-assemble of the side A bearing housing.

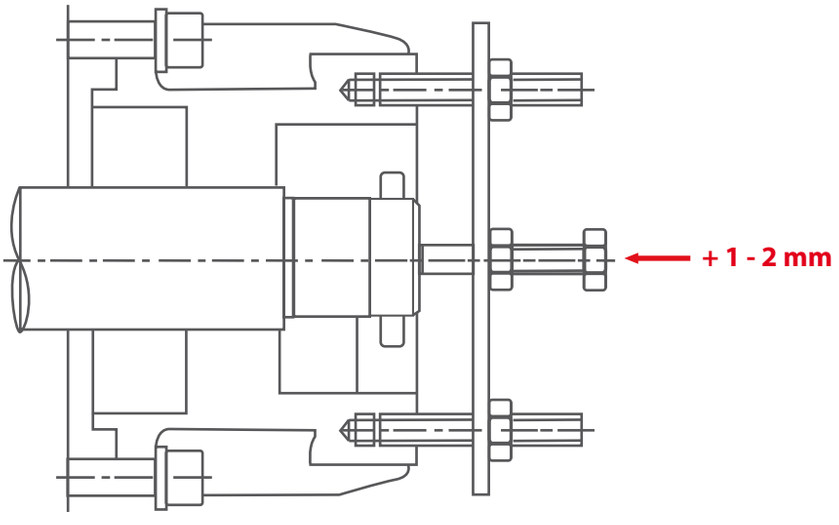
Same operating mode that side B bearing´s housing B until the assembly of the bearing.

BEARING CHANGE PROCEDURE

6.1 - Assembly of the side A bearing.

- Block the position of the shaft with a hub extractor on the side B bearing housing.
  The extractor is useful here to fix the position of the shaft to prevent it from moving back during the assembly of bearing side A and has to absorb the shocks during the assembly of the new bearing.

Extractor



Tool for maintaining bearing in position

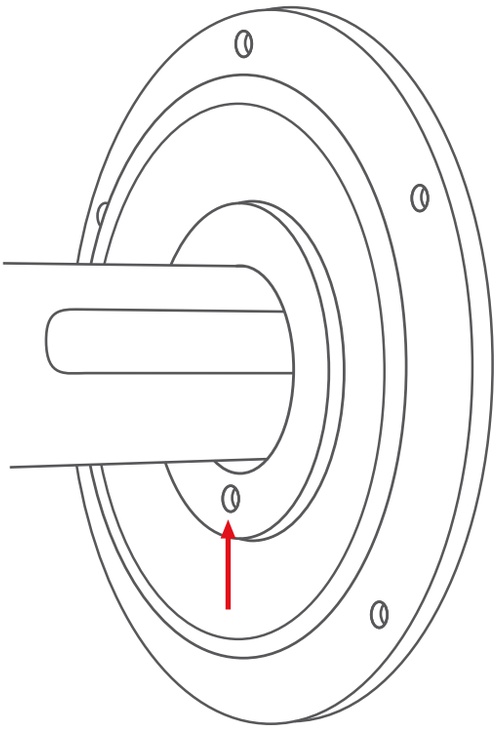
(see Technical data sheet for each model)

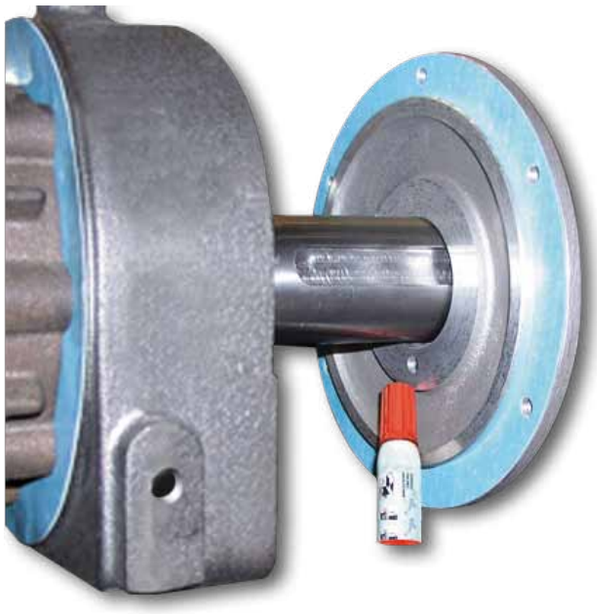
- Measure the distance X: from the beginning of the shaft until the shoulder.
- With a bearing heater, hear the inner ring of the new bearing until 90°C.
- With a hand anvil (tools item) and a little sledgehammer, install the bearing on taping on the hand anvil until it rebounds on the bearing.
- Check the location of the bearing with the distance X minus the bearing thickness.
  (Very important for the location of the rotor)
- Remove the hub extractor from the side B and close the housing.

BEARING CHANGE PROCEDURE

End of the assembling of the side A bearing housing.

- Oil reservoir (item 12)
- Long spacer (item 7)
- Short spacer (item 8)
- Oil reservoir cap (item 13)
- Nut KM20 and his locked washer (item 11)
- Housing cap and his gasket , the oil return hole on the cap should be in downard position.



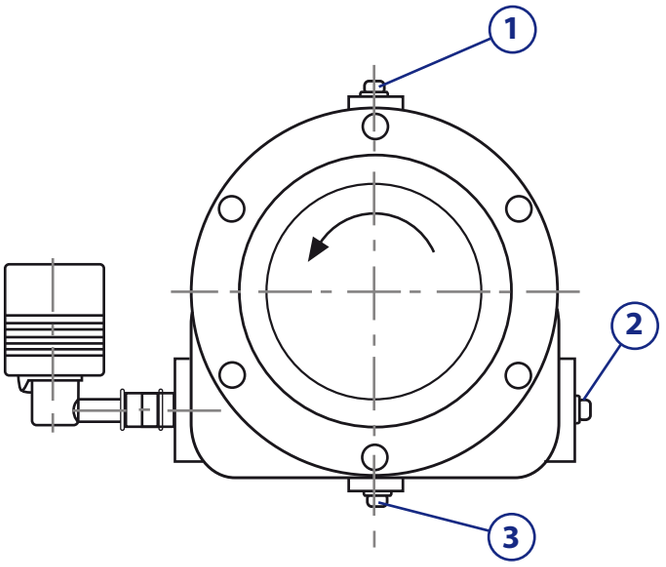


BEARING CHANGE PROCEDURE

7 - Oil levelling

The housing can be correctly filled by introducing the oil via the opening made by removing the plug 1 (see figure A) until a few drops emerge from the opening made by removing the plug 2.
Once this level have been reached, plugs 1 and 2 can be replaced and oil can continue to be added via the transparent bulb in the oil feeder (as show in figure B) until the level in the bulb itself stabilizes.

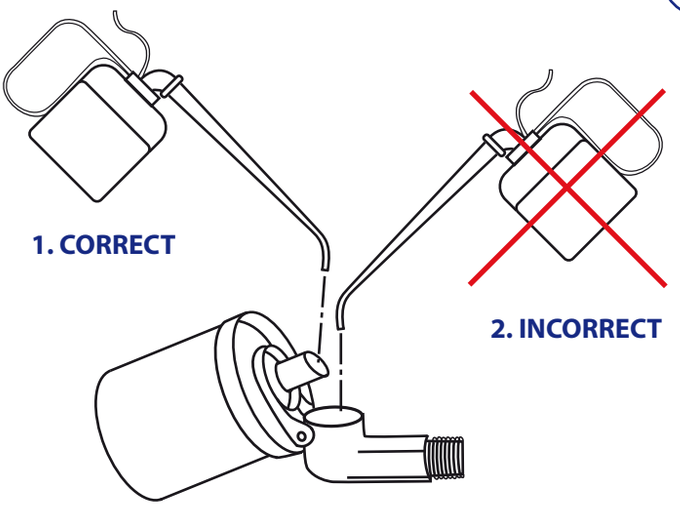
A



1. FILLING PLUG
2. LEVEL PLUG
3. DRAIN PLUG

It is recommended that when filling, the same oil should be used as that used for fill the housing, to avoid the danger of mixing oils which are incompatible with each other.

B



1. CORRECT

2. INCORRECT